

What is claimed is:

- 1 1. A nozzle for injection molding, comprising:
2 a thermally conductive nozzle body defining an internal passage for
3 conveying a flow of heated melt through the nozzle body;
4 a nozzle tip on an end of the nozzle body, communicating with the
5 internal passage, wherein the nozzle tip is structured for engagement with a
6 mold for coupling the passage to an injection inlet; and,
7 wherein a heat flow blocking configuration is disposed between an
8 extreme end of the nozzle tip and a point of the internal passage spaced back
9 from the nozzle tip.
- 1 2. The nozzle of claim 1, wherein the heat flow blocking
2 configuration comprises a portion having reduced thermal conduction capacity
3 between the extreme end and the point spaced backed from the nozzle tip.
- 1 3. The nozzle of claim 2, wherein the portion having reduced thermal
2 conduction comprises a reduction in wall thickness along the internal passage.
- 1 4. The nozzle of claim 3, wherein the reduction in wall thickness
2 occurs at an extension of the internal passage at the extreme end of the nozzle
3 tip.
- 1 5. The nozzle of claim 4, further comprising at least one fin
2 extending laterally from the extension of the internal passage to the nozzle
3 body, for supporting said extension.
- 1 6. The nozzle of claim 5, wherein the fin supporting the extension
2 has a material gap between the extension and the nozzle body.
- 1 7. The nozzle of claim 1, wherein internal passage extends axially
2 along the nozzle body to an axially placed cylindrical hub of a diameter less
3 than a diameter of the nozzle body.

1 8. The nozzle of claim 7, further comprising a tubular extension from
2 the cylindrical hub, the tubular extension having a wall thickness less than a
3 wall thickness of the cylindrical hub.

1 9. The nozzle of claim 8, further comprising at least one fin forming a
2 buttress supporting the tubular extension relative to the cylindrical hub.

1 10. The nozzle of claim 9, wherein the fin forms at least two radially
2 extending buttresses.

1 11. The nozzle of claim 10, wherein the buttresses are diametrically
2 opposite.

1 12. The nozzle of claim 9, wherein the fin has a gap between the
2 cylindrical hub and a buttress forming web.

1 13. The nozzle of claim 9, wherein the web extends along a line of a
2 spherical surface.

1 14. A nozzle for coupling to an injection mold having an injection inlet,
2 comprising:

3 a thermally conductive nozzle body defining an internal passage for
4 conveying a flow of heated melt through the nozzle body;

5 a nozzle tip on an end of the nozzle body, communicating with the
6 internal passage, wherein the nozzle tip is structured for engagement with a
7 mold for coupling the passage to an injection inlet; and,

8 a thermally discontinuously conductive structure disposed between an
9 extreme end of the nozzle tip and a point of the internal passage spaced back
10 from the nozzle tip.

1 15. The nozzle of claim 14, wherein the nozzle substantially
2 comprised a thermally conductive metal material and the thermally
3 discontinuously conductive structure comprises a gap in the thermally
4 conductive metal material between the nozzle body and the nozzle tip.

1 16. The nozzle of claim 15, wherein the gap comprises a reduction in
2 material thickness.

1 17. The nozzle of claim 16, wherein the gap comprises an opening in
2 a supporting web.